

REPORT BY THE STANDING JOINT COMMITTEE ON METRICATION

Introduction

1. In their report of December 1950 the Committee on Weights and Measures (Cmd. 8219, referred to hereafter as the Hodgson Committee) recommended that the imperial system should eventually be abolished in favour of the metric after discussions with all parties concerned on the period of transition that is desirable. During the subsequent years the consensus of opinion in favour of an early change grew. On 24th May, 1965, the President of the Board of Trade made a statement in the House of Commons accepting the request from industry for the support by Her Majesty's Government of industry's decision to implement a planned change to the metric system in the next few years. A copy of this statement is at Annex A. It was recognized that the process of change would be gradual, and a time span of 10 years was proposed for the industrial transition to the new system. The basis of present policy is contained in the following phrase:

'... the Government consider it desirable that British industries on a broadening front should adopt metric units, sector by sector, until the system can become in time the primary system of weights and measures for the country as a whole.'

2. In the same statement the President of the Board of Trade expressed the Government intention:

'... to establish a small standing joint committee of representatives of Government departments and industry to facilitate the removal of obstacles and to keep under review the progress which is being achieved.'

In March 1966 the Minister of Technology appointed the Standing Joint Committee on Metrication with the following terms of reference:

'To encourage, assist and review the progressive adoption within British industry of the metric system of weights and measures.'

3. Representations have been made to the Committee by industry, and notably by the Confederation of British Industry and the British Standards Institution, that further action by Her Majesty's Government is essential to facilitate the change. Industry has requested that the Government should now provide general guidelines for the planning and timing of the change for the non-industrial sectors of the economy, and that the Government should establish a small central organization to co-ordinate plans for the adoption of the metric system by the country as a whole. Industry has also made further representations about the timing of the enabling legislation recommended by the Committee in May 1967. Planning and guidance for the non-industrial sectors of the economy are outside the Committee's terms of reference, and are primarily the responsibility of other Ministers. However, it is the Committee's duty to advise the Minister of Technology of action needed to remove obstacles to the industrial change. Serious obstacles foreseen by industry to their changeover to the metric system arise from the present lack of guidance and planning for the non-industrial sectors

of the economy. The recommendations in this Report stem, therefore, from the industrial change, with which the Committee is concerned, and represent the view of industry.

Summary of progress since 1965

4. The further steps now recommended follow directly from the substantial progress made in planning the industrial change since May 1965. The programme for the building and construction industry was published by the BSI in February 1967 and the Government has agreed to work to it. It provides for the start of production of drawings and documents in metric terms for all new contracts on 1st January, 1969, and for the industry to be working on site in metric units for all new construction after the end of 1972. Consultations (including those involved in the programme published by the Engineering Equipment Users Association) about the broad timetable for the engineering industries are now nearing completion; further programmes providing more detailed guidance within that broad framework for particular industries will be issued, and those for the Electrical and Shipbuilding industries are being prepared for publication later this year. It is already apparent that the main change in the engineering industries will begin in 1970 and is likely to be about 80 per cent complete by the end of 1975, though some particular industrial sectors or individual firms may have an extended timescale if those concerned expect little early benefit from expanded markets, variety reduction and rationalization of standards, or because of the need to minimize the cost of change. A number of smaller industries already have terminal dates for their programmes: for example 1970 is the date for the cable manufacturers and for the paper and printing industry; 1972 is the date for the photographic industry. The pharmaceutical industry has already effected the changeover.

5. An essential step in the progress of industrial metrication is the availability of British Standards written in metric terms. About 700 such standards were available in 1965, and as a first priority a further 1300 needed to be revised in metric terms and harmonized internationally wherever possible. It is expected that these metric standards will be available by the end of 1970. About 500 of them, regarded as key standards for the change, are scheduled for completion by the end of 1968. It is, of course, recognized that in some respects the UK will be in advance of universal application of SI units for many practical purposes, and it will be necessary to ensure that standards are aligned with overseas market practice. Where inch practice is worldwide only straight conversion of dimensions should be used until the situation changes.

Education

6. The Ministerial statement in May 1965 referred to the educational changes involved in metrication in the following terms:

'We are also considering how we can best encourage the educational work to familiarize future school generations and students in technological establishments with working in terms of metric units.'

The SJCM has consulted the Department of Education and Science, the Scottish Education Department, the Schools Council, Examination bodies, local authorities and other bodies, including the Royal Society and the Council of Engineering Institutions, with an interest in higher education. These discussions have

been concerned with the increasing industrial need for metric education, with the related changes caused by the advent of decimal currency in 1971, and with the Government's general intention that the metric system should become in time the primary system of weights and measures for the country as a whole.

7. These discussions about the teaching of international metric units—the *Système International d'Unités* (SI)—have led the Committee to believe that educational programmes are likely to keep in step with the industrial recommendation that 1969 should be the date by which time the emphasis should have changed to the use of metric units in school education. Metric units will be used generally in higher educational courses in science, engineering and technology from 1969 onwards. The more important imperial units must continue to be taught in primary and secondary education after 1971 until the timetable for the adoption of the metric system by the country as a whole has been decided, but the metric system is now expected to be increasingly prominent in all teaching by that date.

8. It has been impressed upon the Committee that the very substantial advantages of the metric system in education will only accrue when it is no longer necessary to include two systems of units, and when teaching of the more complicated imperial system can be discontinued. The Committee has taken note of the view of the Central Advisory Council for Education that our non-decimal currency and the imperial system of weights and measures offer a serious impediment to mathematical education. Educationalists, in their evidence to the Halsbury Committee, also stressed that the full benefits of a decimal currency would only be obtained in conjunction with a full metric system of weights and measures. The Hodgson Committee pointed out that the abandonment of the imperial system should be accompanied or preceded by the decimalization of the currency if the advantages in commercial and domestic calculation were to be optimized. Long-term planning of education will therefore be assisted, when the programme for the adoption of the metric system by the country as a whole is settled.

9. Fluency by workpeople in the use of metric units will become an increasingly important matter for industrial efficiency. The continued use for any longer than is necessary of imperial units in domestic life must delay the acquisition of familiarity with metric units by all industrial employees, and must delay the concentration by educationalists on the teaching of metric units that is desirable. The Committee is now satisfied that the education service and the industrial training service will be able to meet industrial needs in the crucial years between now and 1975, though educational time and resources will be wasted until a decision is taken on the change in the non-industrial sectors of the economy, and the vestigial teaching of imperial units in the primary and secondary schools can be abandoned. Industry itself will, of course, have its own contribution to make in the re-training of staff.

Timing of the change for the country as a whole

10. The Ministerial statement of May 1965 made the following reference to timing:

'Practical difficulties attending the changeover will, of course, mean that this process must be gradual; but the Government hope that within ten years the greater part of the country's industry will have effected the change.'

The Hodgson Committee concluded in 1950 'that a change from imperial to metric for all trade purposes is sooner or later inevitable'. Now that the change for industry is committed, the timing of the change for the other sectors of the economy has assumed great importance. The Standing Joint Committee considers that guidance is now needed from Her Majesty's Government on the timing of the change for the country as a whole against the background of industry's experience of planning the change to the 1975 dateline. The Hodgson Committee believed that the engineering industry change would present greater problems than that of the retail and general sectors of the economy, but that it was right to plan for a similar time span for industry and the other sectors, so that broadly the change should be completed for the country as a whole at the same time. The Standing Joint Committee considers that unless the change in the non-industrial sectors is co-ordinated with that in industry this will cause confusion, waste of resources in industry and education, and deferment of the benefits of the change. The Committee supports, indeed, the Hodgson Committee's conclusion in favour of an 'ordered change within a definite time limit'.

11. The Confederation of British Industry has recommended that some changes in the retail sector should begin in 1971 and be completed by 1975, to allow those trades which find it cheaper and simpler to do so, to make the change simultaneously with the currency change. The Consumer Council has recommended that the main changes in the retail sector should not begin before 1972 and should proceed within the period 1972 to 1975. The Shippers' Council has recommended that shipping documents, which include the associated customs and excise procedures and trade statistics, should be metricated and harmonized with those of metric countries of Europe and elsewhere in 1971. They strongly recommend that imperial and metric units should not be used together. The Food Manufacturers' Federation, having carried out a survey of its members, favours the change 'as being in the long-term interests of the food manufacturing industry', but recommends that a decision on the actual timetable for the changeover, which should allow some flexibility, should be taken only after 'the fullest consultation with the retail food distribution trades'. They have recommended, in connection with the revision of the Labelling of Food Order, that by 1970 food labels should bear a statement of weight or measure in metric units, and that by 1972 statements in imperial units should be dropped, although it should not be made illegal to pack with a dual declaration of measure after that date. The Civil Aviation authorities will have problems of flight safety to consider, and any timing for completion of the already substantial metrication of civil aviation operations will have to be based on international agreement.

12. The Committee has not examined the detailed problems involved in changing the retail sector of the economy, since these are not within its terms of reference. The Confederation of British Industry has, however, advised the Committee that unless the retail sector adopts the metric system in step with its adoption by industry many manufacturers will in due course be selling primarily in metric units for export and to other manufacturers, whilst being obliged to continue to sell in imperial units to the retail sector at home. Industry believes that this will increase manufacturing costs by the duplication of the operations of design, production and sale—including packaging, transportation and promotion—for all except the declining number of imperial markets. These costs will be increased for reasons that are avoidable and irrelevant to the best future

patterns of trade within the United Kingdom. The change to the metric system provides a unique opportunity for reducing the present unnecessary variety of commodities in many markets, and delay in introducing the metric system in the retail sector would prejudice the variety reduction that would otherwise be possible.

13. The Committee is persuaded that the persistence of two systems of units in the United Kingdom for any longer than is necessary will discourage export by manufacturers (except to North American markets) and will discourage the transfer of design and marketing skills and equipment from the home to overseas markets. The continued use of the imperial system constitutes in industry's view a substantial hindrance to export trade that is acquiring greater significance as tariffs with metric countries are reduced following the Kennedy Round and the EFTA Agreement. It is the declared policy in the UK to give every support to the framing and acceptance of international, and particularly European, standards. The alignment of United Kingdom standards with those of EFTA or EEC is most difficult without the adoption of the metric system. Such alignment is desirable in order to reduce non-tariff barriers to trade with Europe whatever the result of the United Kingdom application to join the EEC. However, the adoption of the metric system will also be accepted by European countries as evidence of the United Kingdom's determination to become a more integral part of Europe. Europe is wholly metric except for the United Kingdom and the Irish Republic, and the latter has recently announced an intention to change in industry by 1975 and in due course in the retail, transport and other sectors. Since 1965 the consideration of the use of the metric system has increased substantially even in those few remaining countries which, as former British colonies, have traditionally used the imperial system.

14. The need for international alignment and harmonization is not confined to engineering. It is of particular importance to a number of industries selling in the retail sector that the dimensions of packages and containers of all kinds should be rationalized in the course of adopting the metric system in order to achieve the economies possible by variety reduction. It is therefore important for these industries that the metrication of retail trade and commerce should proceed in step with industrial plans. The urgency is greatest for those manufacturers supplying the building and construction industry, and for the makers of packaging machinery. It is thus more urgent for retail trade in packaged goods to be changed to the metric system, than for the bulk-breaking retail activities to follow suit. In any event the time needed for recalibration of weighing equipment will be an important factor in planning for the retail sector.

15. The Committee, representing as it does the industrial need, supports the recommendations made to it by industry, notably by the Confederation of British Industry and the British Standards Institution, that it is imperative for the planning of the change in the general sectors of the economy to be put in hand; that if this is not done, the dynamism of the industrial change will be prejudiced; and that a guideline date should be given for the planning. It is the Committee's view (which accords with the Hodgson Committee Report recommendation that broadly the whole operation should be completed at about the same time) that the appropriate guideline for such planning would be the end of 1975. This proposed target date for the change in the non-industrial sectors should however be interpreted only as broad guidance; the change for particular

sectors of retail trade, transport, land transactions, customs-and-excise procedures, shipping documents and the rest should be the subject of detailed consultations and planning, against the general background and timescale of educational and industrial change. The right terminal dates for particular sectors will vary; some may be found on examination to be before 1975 and some after. Planning, against a general guideline, will establish the optimum timing for each sector of the economy. Experience of the industrial planning has shown that the co-ordination of the plans for different sectors is only possible if a guideline date is given against which sector plans are made. Indeed, in the absence of such a guideline (which would accord with the Hodgson Committee's recommendation for a time-limit to be set for the changeover to a fully metricated economy) planning will not proceed on the largely voluntary and democratic basis that is desirable.

Organization

16. The Committee has considered whether it is now desirable that a balance-sheet and an outline plan for the country as a whole should be produced. It has concluded that it would be impracticable to produce a balance sheet and undesirable to devise any outline plan. Both the benefits and costs of metrication are virtually impossible to quantify even for a single industrial concern. Planning should continue to proceed sector by sector, and the detailed plans should be drawn up as far as possible by the interests concerned with the various sectors (including Government departments). The Government will continue to have the opportunity of considering the plans as they become available for particular sectors, and will not be committed to support the detail of any sector plan in advance of its formal submission.

17. An organization will be needed to co-ordinate the sector plans for the country as a whole. There are now many hundreds of professional people engaged on the metrication of the industrial sectors of the economy, their endeavours being co-ordinated at the centre by full-time staffs in the British Standards Institution and the Ministry of Technology. The Committee considers, as does industry, that only an organization such as a Metrication Board, with a high calibre full-time staff, could similarly co-ordinate the programme for the adoption of the metric system by the country as a whole. It is important that all the various aspects of the problem should be brought into a proper relationship with one another. The coming years will require a series of decisions at different times rather than a single decision. It will be an important task of the Board to pinpoint—in consultation with Government departments, commerce, industry, educational interests, and so on—the stages at which requirements would arise for legislation, administrative decisions, large supplies of new equipment, major expenditure (by Government departments or by other bodies), and changes in business or commercial practice. The experience of the SJCM of the planning for the industrial change suggests very strongly, however, that the planning of programmes of change should primarily be the task of those who will have to operate them. It may be desirable to establish committees—perhaps on the lines of the SJCM—co-ordinated by the Metrication Board, for other major economic sectors such as the retail trade, distribution, transport, agriculture, customs and excise and land transactions. These committees would have to identify the problems, and ensure that the consensus procedures for producing sector plans were satisfactory. Reference to Ministers for decisions on the more

important questions will be necessary from time to time, notably when statutory instruments are required, though many of the decisions needed will be technical and detailed.

18. All Government departments are concerned, though in different ways, with the adoption of the metric system by the country as a whole. Only a single central department could satisfactorily take the responsibility for or sponsor a Metrication Board to programme the adoption of the metric system by the country as a whole.

19. As soon as each sector of industry, and each sector of the non-industrial parts of the economy, agrees upon its programme it is essential for there to be an associated programme of publicity and education. At the present time it is appropriate for much of this publicity to be concentrated in the technical and trade press. By 1970 there will be increasing numbers of industrial operatives working for the first time in metric units and the numbers will increase for the following five years after that date until they include most of the industrial labour force. For industrial purposes, and as decisions are taken for the non-industrial sectors, it will be essential for there to be concerted general publicity to prepare the public for the change. The Committee believes that if a Metrication Board is established it should have a special responsibility for general countrywide public relations activities and should also take over from the present sub-committee of the SJCM the co-ordination of publicity aimed at industry. The new Board would require substantial resources for information purposes. The Hodgson Committee recommended 'a lengthy process of preparing the general public for the change'.

20. Industry has been advised that the costs of adopting the metric system must lie where they fall. There may possibly be particular exceptional circumstances in the retail and general areas and within industry where a case for compensation might be made, but it could be left to the proposed Metrication Board to receive and consider representations and, if it wished, to make recommendations to Her Majesty's Government. Certain costs will also fall directly upon Government departments, for example in the transport field. Industrial experience suggests that costs depend very much upon the timing of the change. It will fall to the Metrication Board to provide estimates of the likely costs to Her Majesty's Government on different timescales, working in consultation with the appropriate Government departments, and with such joint committees as may be set up to identify the problems and make plans for the change in the various sectors of the economy.

21. The Committee accordingly recommends that a Metrication Board with a full-time staff be appointed as soon as possible. The members of the Board should be primarily drawn from industry and commerce on a part-time basis; Her Majesty's Government, education and consumer interests would also have to be represented. The Chairman should be a national figure in industry or commerce. The small full-time staff should be of high calibre and include administrators, engineers or scientists, and public relations experts. It should be sponsored by one of the central departments of Government. Its terms of reference should require it to:

- (i) ensure that the planning of the change for the economy as a whole is organized and co-ordinated between sectors, particularly as regards timing, making use of the activities of such bodies as may be set up

on the pattern of the SJCM to carry through the planning for particular sectors;

- (ii) identify, in consultation with all interested organizations, the stage at which legislation, administrative decisions, major expenditure, and the like will be required;
- (iii) devise a co-ordinated campaign of publicity and information for the changes in the various sectors;
- (iv) ensure that the relevant educational interests are kept fully and continually informed of progress as a whole and of progress in planning particular sector programmes so that they can assess the nature and timing of such consequential educational changes as may be required;
- (v) make recommendations to Her Majesty's Government, if it thinks fit, on special cases of hardship which might merit consideration for compensation;
- (vi) assist in the preparation of enabling legislation (see below) and endeavour to ensure that the necessary changes in subsidiary legislation required by specific sector changes are made in time;
- (vii) support the British Standards Institution in aligning UK practice with that of other metric countries, and encourage variety reduction.

Legislation

22. The Committee has already recommended (May 1967) that the Government should proceed with enabling legislation. This recommendation is now the subject of inter-departmental consultation. Legislation is required to specify the units to be used which will follow the *Système International*; this is already being embodied in the laws of 23 countries and is likely to become the only system of units in the world in due course. It will need to specify the preferred multiples and submultiples to be used for legal purposes with the various SI basic and derived units. For this purpose full consultation will be necessary with interests concerned in the United Kingdom, and in Western Europe; such consultation has already begun. The legislation is required to make metric units legally permissible for a variety of purposes where many existing Statutes require imperial or other units to be used. It is not practicable for a single Act of Parliament to make all the changes required and it is proposed that an enabling Act should make it possible for the more important changes to be made by regulations sponsored by the responsible department, where no present powers exist for this purpose. A conversion table will also be incorporated in a Schedule to the Act to provide for immediate change, by simple reference, where direct numerical conversion is a possible solution. New decisions will generally be required: for example a speed limit of 30 miles per hour will probably not become 48.28 kilometres per hour, but possibly 50 kilometres per hour.

23. In order to meet the industrial timetable the Committee considers it to be necessary for the enabling Metric Act to be on the Statute Book and in force by the beginning of 1971; this requires that the Bill be presented during the Parliamentary Session 1969-70. This date is earlier than was previously envisaged, and is now proposed because of the new evidence that the timing of the general industrial change will be some 12 months in advance of the earlier estimate of around 1971-2.

Summary of Recommendations

24. (i) The Government should indicate the end of 1975 as the guideline date for the adoption of the metric system by the country as a whole, it being understood that programmes for the changeover should be devised by those concerned, sector by sector within the economy, against this guideline date. These programmes may, on detailed examination of the problems involved, aim at an earlier or later date.
- (ii) Planning bodies representing all interests concerned with a particular sector of the economy should be established to identify the problems, and to prepare sector programmes of change against the guideline date of 1975. A Metrication Board should be established under the sponsorship of a central department of Government with its own full-time staff to oversee, stimulate and co-ordinate the sector planning bodies. The Board should thus be the central planning agency, and be responsible for preparing the public for the change.
- (iii) Enabling legislation, specifying the metric units to be used and permitting the necessary changes to be made in all sectors by statutory instrument, should have an appointed day not later than January 1971.

Signed:

Chairman A. H. A. WYNN

Secretary R. JARDINE

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9th May, 1968.

Annex A

Extract from Parliamentary Debates (Hansard) House of Commons Monday, 24th May, 1965 (Columns 32 and 33)

Weights and Measures (Metric System)

Mr. Horner asked the President of the Board of Trade if he will make a statement on the adoption in Great Britain of metric weights and measures.

Mr. Jay: The Government are impressed with the case which has been put to them by the representatives of industry of the metric system of weights and measures. Countries using that system now take more than one-half of our exports; and the total proportion of world trade conducted in terms of metric units will no doubt continue to increase. Against that background the Government consider it desirable that British industries on a broadening front should adopt metric units, sector by sector, until that system can become in time the primary system of weights and measures for the country as a whole.

One necessary condition for advances in this field will be the provision of metric standards, wherever possible internationally recognized, which will enable particular sectors of industry to work in metric units. The Government have therefore asked the British Standards Institution—and the Institution have agreed—to pay special attention to this work and to press on with it as speedily as possible. The Government will, of course, take this new commitment into account in determining the amount of future grants-in-aid to the Institution. We are also considering how we can best encourage the educational work to familiarize future school generations and students in technological establishments with working in terms of metric units.

We shall also encourage the change to the metric system as and when this becomes practicable for particular industries, by seeking to arrange that tenders for procurement by the Government and other public authorities shall be in terms of metric specifications.

Practical difficulties attending the changeover will, of course, mean that this process must be gradual; but the Government hope that within ten years the greater part of the country's industry will have effected the change. To this end they propose to establish a small standing joint committee of representatives of Government departments and industry to facilitate the removal of obstacles and to keep under constant review the progress which is being achieved.

The Government will keep in touch with Commonwealth Governments on this matter.

**Change to
the Metric System
in the United Kingdom**

Report by the
Standing Joint Committee
on Metrication

LONDON
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1968

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**Text of a letter of the 14th May, 1968,
from Mr. A. H. A. Wynn,
Chairman of the Standing Joint Committee on Metrication
to The Rt. Hon. Anthony Wedgwood Benn, M.P.,
Minister of Technology**

I have the honour to submit herewith a Report of your Standing Joint Committee on Metrication.

The Report has the unanimous support of your Committee, although one new member, Mr. G. P. Glass, was appointed by you too recently to participate in the Committee's deliberations. All Government departments and a very wide range of industrial interests have been consulted on the text and recommendations. No disagreement with the recommendations has been brought to your Committee's notice. The recommendations have in particular the support of the Council of the Confederation of British Industry and the Executive Committee of the British Standards Institution. Both these organizations have consulted their members, who are representative of the greater part of British industry, before advising the Committee. The Royal Society and the Council of Engineering Institutions support the recommendations.

The Committee have asked me to emphasize the urgency of a Government announcement. The representatives of the building and construction industry in particular have expressed this view in very strong terms. The Ministry of Housing and Local Government, with the building and construction industry in mind, has emphasized 'the imperative need for planning the changeover in the general sectors of the economy' and a similar view has been expressed by the Ministry of Public Building and Works.

The Committee has also asked me to draw to your attention the increasing pace of adoption of metric units throughout the world. A year ago it seemed likely that the whole world would have adopted metric units by about 1975 except the USA and Canada. A Metric Study Bill has, however, recently been passed by a Committee of the US Congress and a similar Bill is before the Canadian Parliament. It is apparent from other evidence that there has recently been a substantial change in industrial opinion in US industry.

The Committee wish to commend to you the publication of their Report in the belief that this would promote more informed public discussion of the far-reaching implications of their recommendations.

STANDING JOINT COMMITTEE ON METRICATION

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| <i>Chairman:</i> Mr. A. H. A. Wynn: | Adviser on Standards, Ministry of Technology. |
| <i>Members:</i> Mr. H. A. R. Binney: | Director, British Standards Institution. |
| Sir Anthony Bowlby: | Chairman, Guest Keen & Nettlefolds Screws & Fasteners Ltd., and Chairman, Guest Keen & Nettlefolds Bolts & Nuts Ltd. |
| Mr. E. W. Consterdine: | Draughtsmen's & Allied Technicians' Association. |
| Mr. J. Conway: | General Secretary, Amalgamated Engineering Union. |
| Mr. G. P. Glass: | Trade Relations Division, Shell International. |
| Mr. E. W. Greensmith: | Engineering Adviser, Imperial Chemical Industries Ltd. |
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| Dr. D. H. Sharp: | Technical Director, Confederation of British Industry. |
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| Mr. W. W. Abson: | Ministry of Technology. |
| Mr. B. R. T. Aitken: | Department of Economic Affairs. |
| Brigadier R. A. Blakeway: | Ministry of Defence. |
| Mr. M. S. Morris: | Board of Trade. |
| Mr. A. B. Saunders: | Ministry of Public Building and Works. |
| Mr. R. Jardine: | Ministry of Technology (<i>Secretary</i>). |